

IN THE CLAIMS

Please cancel Claims 1-13, 15, 16, and 26.

1-13. (canceled)

14. (currently amended) A system for controlling a boiling water nuclear reactor, said system configured to:

define a set of operating characteristics for the reactor in an upper operating region above 100 percent of a rated core thermal power, that defines an upper boundary line of the upper operating region, the upper boundary line comprising a first endpoint of about 120 percent rated thermal power at about 85 percent core flow and a second endpoint of about 100 percent rated thermal power at about 55 percent core flow;

evaluate an expected performance of the reactor throughout the upper operating region; and

establish limits for the reactor that are to be observed within the upper operating region.

15. (canceled)

16. (canceled)

17. (original) A system in accordance with Claim 14 wherein said system is further configured to perform operational evaluations in the upper operating region.

18. (original) A system in accordance with Claim 17 wherein said system is further configured to establish constraints and requirements for plant equipment and plant procedures based on the operational evaluations.

19. (original) A system in accordance with Claim 14 wherein said system is further configured to perform safety evaluations in the upper operating region.

20. (original) A system in accordance with Claim 19 wherein said system is further configured to create a safety analysis report based on the safety evaluations.

21. (original) A system in accordance with Claim 14 wherein said system is further configured to establish compliance with safety design parameters based on the safety evaluations.

22. (original) A system in accordance with Claim 17 wherein said system is further configured to provide automatic adjustment of the control rod pattern, the flow controls, and the pressure controls based on the detection of a reactor transient.

23. (original) A method for expanding the licensed operating domain of a boiling water nuclear reactor, the operating domain characterized by a map of the reactor thermal power and core flow, said method comprising the steps of:

providing analyses and evaluations to generate a safety analysis report;

providing licensing support; and

providing technical consultation.

24. (currently amended) A method in accordance with Claim 23 wherein providing analyses and evaluations comprise the steps of:

determining an elevated load line characteristic that ~~improves reactor performance~~ permits operation of the reactor in an upper operating region defined by an upper boundary line, the upper boundary line comprising a first endpoint of about 120 percent rated thermal power at about 85 percent core flow and a second endpoint of about 100 percent rated thermal power at about 55 percent core flow;

performing safety evaluations at the elevated load line to determine compliance with safety design parameters; and

performing operational evaluations at the elevated load line.

25. (currently amended) A method in accordance with Claim 24 further comprising the step of defining a set of operating conditions for the reactor in [[an]] the upper operating domain characterized by the elevated load line.

26. (canceled)

27. (original) A method in accordance with Claim 24 wherein performing operational evaluations at the elevated load line comprises the steps of :

evaluating plant maneuvers;

evaluating frequent plant transients;

evaluating plant fuel operating margins;

evaluating operator training;

evaluating plant equipment response and setpoints.

28. (original) A method in accordance with Claim 27 further comprising the step of establishing constraints and requirements for plant equipment and plant procedures based on the operational evaluations.

29. (original) A method in accordance with Claim 28 further comprising the steps of performing a detailed analysis of the performance of the core recirculation system and performing a detailed analysis of the core recirculation system control components.

30. (original) A method in accordance with Claim 28 further comprising the steps of providing automatic adjustment of the control rod pattern, the flow controls, and the pressure controls based on the detection of a reactor transient.

31. (original) A method in accordance with Claim 28 further comprising the steps of modifying the reactor process controls and computers to permit the reactor to operate in the expanded operating domain within predetermined safety parameters.

32. (original) A method in accordance with Claim 24 further comprising the step of creating a safety analysis report based on the safety evaluations.